**BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA**

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| Order Instituting Rulemaking to Examine the Commission's Post-2005 Energy Efficiency Policies, Programs, Evaluation, Measurement and Verification, and Related Issues. | ) ) ) ) | Rulemaking 06-04-010 (Issued April 13, 2006) |

# COMMENTS OF SOUTHERN CALIFORNIA EDISON COMPANY (U 338-E) ON EMBEDDED WATER SAVINGS ISSUES

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Dated: **July 31, 2006**

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# COMMENTS OF SOUTHERN CALIFORNIA EDISON COMPANY (U 338-E) ON EMBEDDED WATER SAVINGS ISSUES

Southern California Edison Company ("SCE") respectfully submits these comments as required by Commissioner Grueneich's May 24, 2006 Assigned Commissioner's Ruling And Scoping Memo And Notice Of Phase 1 Workshops On Risk/Return Incentive Mechanism ("ACR") in the Energy Efficiency Rulemaking ("EEOIR"), Rulemaking 06-04-010. The ACR requests parties file opening comments on the issues described in the ACR.

## I.

## INTRODUCTION

SCE supports the California Public Utilities Commission's ("Commission") initiative in the EEOIR to assess the issue of counting "embedded energy savings" in reducing water usage towards the 2006-2008 savings goals. SCE is generally supportive of programs which provide measurable, cost-effective, energy savings in SCE's service territory as a result of actions taken towards the reduction of water usage. To the extent that such cost-effective energy savings can be quantified and relied upon for procurement planning purposes by SCE, programs that produce these savings should be pursued. SCE recommends that if the Commission adopts a means for quantification of cost-effective energy savings during the 2006-08 program cycle that such

programs should be undertaken during this cycle and the resulting savings should count towards the Commission energy savings and demand reduction goals for this program cycle.

SCE looks forward to working with the Commission and other interested parties in this process to develop the details of how such savings should be quantified and included in the 2006-08 energy savings results. Below are responses to the questions posed by the Commission in Attachment 1 of the ACR.

## II.

## SCE RESPONSE TO QUESTIONS IN THE ACR

***1. To date, the energy savings from efficiency programs have been limited to on-site end-use savings. What differentiates "embedded" energy savings from water efficiency from "embedded" energy savings associated with other measures?***

The energy embedded in the delivery of water is more readily quantifiable than that of other measures (for example, material reuse & recycling), and incentive programs addressing water conservation are more well developed.[1] Also, the embedding of energy in California water mostly takes place in California; i.e. is drawn from the California grid. This is in contrast to, for example, the embedding of energy in manufactured goods, which often occurs outside of California or even the U.S.

The concept of saving systemic (embedded) energy by saving water is more scientifically and politically "mature" than with other measures. Water conservation programs with prescriptive measures, quantified water savings, and proven EM&V performance have already been developed by water agencies and can more easily be coordinated with the electric utilities' energy efficiency offerings. Additionally, a broad range of environmental, political, and policy-

[1] Attachment 1 of the ACR appears to limit the discussion of embedded water energy savings to upstream energy inputs. However, it is logical that the downstream inputs, such as wastewater treatment and disposal by sanitation districts, be included in the discussion of embedded water energy savings as well.

making entities are actively pursuing and promoting indirect energy savings via water conservation.

***2. In principle, should the IOUs be allowed to "count" the embedded energy savings in water efficiency toward their savings goals? In calculating performance basis and evaluating portfolio cost-effectiveness? Why or why not? If so, when should this counting begin (e.g., for the current 2006-2008 program cycle, for 2009 and beyond?)***

Ultimately, the IOUs should be allowed to count embedded energy savings which occur in their service territory, because systemic energy savings have been shown by the CEC and others to be real and quantifiable, and therefore have a positive impact on the California electric grid. While reductions in the power draw from the grid, whether by SCE, PG&E, SDG&E, or another utility served by the grid, benefits all grid users by reducing power congestion and enhancing stability, the IOUs should only be able to claim energy savings which occur in their service territories and can be counted by them for utility procurement purposes. In addition, electric utilities must be able to document specific influence on the customer's decision to implement the water conservation measure. Otherwise, the embedded energy savings claimed may constitute free-ridership.

Quantification of embedded energy savings may begin as soon as the electric utilities are authorized by the Commission to offer water conservation measures and claim the savings towards the Commission's goals. If the CPUC authorizes the incorporation of water conservation measures in the 2006-08 program cycle, these savings should be utilized in the evaluation of IOU accomplishments towards the Commission's 2006-08 goals.

***3. If these savings are to be included, what are the appropriate embedded energy savings from water efficiency numbers to use? We note that the California Energy Commission staff has prepared a report, "California's Water-Energy Relationship," with estimated values – are these numbers appropriate to use? What other sources of this information are currently available?***

The estimates from the CEC Water-Energy Relationship report may be used as a starting point. Quantification of embedded energy savings requires at a minimum that an adjustment be made for the primary source of water by customer location (State Water Project, Colorado River Aqueduct, etc.). Regional or statewide average energy inputs can be reasonably employed for water and wastewater treatment, and local delivery.

Ultimately, and perhaps in concert with a CPUC-authorized commencement of counting embedded energy savings towards the electric utilities' goals, the energy inputs at all stages of water delivery should be more precisely known. SCE will need to know how much energy savings are occurring in its service territory for procurement planning. It is reasonable to expect that in addition to knowing the energy inputs related to delivering water to Southern California via the different possible sources, the water agency's mix of surface water versus groundwater by season and energy needs for local pumping and delivery, and the sanitation district's mode of treatment for the effluent can be quantified by customer location.

***4. How should various "counting" issues be resolved? For example: Are there further upstream energy refinements by the geographic area where the water efficiency is implemented? Are there cross-IOU territory counting issues if water efficiency measures are implemented within a water utility's service area that overlaps with more than one IOU?***

As addressed in the discussion of question 3, any further upstream and downstream energy refinements by customer location should also be included in the quantification of embedded energy savings for water conservation measures. Initially, this information can take the form of regional averages, but eventually more precise figures should be obtained. One possible approach may be to use preliminary estimates of these refinements (perhaps from the CEC's Water-Energy Relationship report) during the 2006-08 cycle both for ex ante forecasting and ex post reporting of program results for determining achievement towards Commission energy savings and demand reduction goals.

There are numerous potential cross-IOU territory counting issues. For example, most of the electricity used to deliver State Water Project water to customers in SCE's territory is

supplied by PG&E's system. As noted in the discussion of question 2, it may be helpful to think in terms of the California grid instead of individual service territories. Any reduction in the power draw from that grid, whether by SCE, PG&E, SDG&E, or another utility served by the grid, benefits all grid users by reducing power congestion and enhancing stability. However, for counting purposes, each IOU should only count the results which occur in its service territory for determination of energy savings and demand reduction toward Commission goals. The means for accounting could be the embedded energy savings counted by the electric utility or utilities supplying the electricity at each point of energy input to the water delivery and treatment process. This gives a more technically correct apportionment of energy savings by utility, and may provide a mechanism to address the issues raised in question 8. However, this option may also disincentivize a utility to deliver water conservation measures if another utility contributes the bulk of the embedded energy, so a unique statewide framework for tracking and crediting these savings may be required.

***5. Would it be appropriate to establish a different counting procedure for the 2006-2008 program cycle versus future cycles?***

Depending upon the results of studies which determine the appropriate accounting of energy savings, a single approach may be utilized for 2006-08 as well as future cycles.

***6. How should EM&V be handled for these embedded energy savings in water efficiency? Would it be feasible to use preliminary ex ante estimates of water savings that are then trued-up using ex-post numbers from an additional evaluation study overseen by the Energy Division?***

If the counting procedures in the discussion of question 5 are adopted, preliminary ex ante estimates can be used for the duration of the 2006-08 program cycle, and no true-up of the quantified 06-08 embedded energy savings is necessary. However, EM&V studies on water conservation measures instituted during the 2006-08 cycle will inform the data used to validate and count savings towards the electric utilities' energy savings goals in the 2009-11 program cycle.

***7. Should embedded energy savings from water efficiency be incorporated into the energy efficiency potential studies? Should a separate potential study by conducted on embedded energy savings in water efficiency?***

Initially, a separate EE potential study on embedded energy savings from water efficiency/conservation may be performed by the appropriate entity. In the future, perhaps for the 09-11 program cycle, embedded energy savings may be integrated into the general EE potential study. However, some separation should be maintained, to allow comparison between traditional and non-traditional (embedded) energy savings potential.

***8. Are there equity issues raised by counting these embedded energy savings where some of the benefit due to reduced water pumping requirements would accrue to entities which do not pay the efficiency surcharges in some or even any of their electrical usage? If so, how should them Commission address them?***

Equity issues may arise if collected surcharges such as PGC funds are used to incentivize the portion of the embedded energy savings that accrue to upstream or downstream energy providers other than the utility from which the PGC funds are collected. This is especially true if an upstream or downstream energy-contributing electric utility does not collect surcharges from their customers.

Traditional energy efficiency measures produce direct benefits in the form of avoided generation for the electric utilities promoting them to their customers. Traditional EE measures also accrue benefits to entities not subject to efficiency surcharges. This is because energy efficiency and demand reduction benefit the electricity grid as a whole and thus all users served by the grid. However, other benefits from water efficiency will accrue to upstream and downstream entities not subject to efficiency surcharges such as reduced procurement requirements.

***9. Depending on your response to the above questions, how should the Energy Efficiency Policy Manual (Policy Rules) be modified? Parties should provide specific suggested language.***

SCE recommends that the energy savings impacts from the implementation of water savings measures be treated on the same basis as the pre-2008 codes and standards program impacts – utilizing a Commission-approved study which provides estimates of energy savings for each utility as the basis of performance towards Commission goals.

## III.

## CONCLUSION

SCE supports the Commission's initiative in this proceeding to assess whether the sources of energy savings that count towards the IOUs' 2006-2008 and later energy savings goals should include the embedded energy savings derived from reducing water usage. SCE appreciates the opportunity to offer these comments and to work with the Commission and all interested parties on this aspect of an important public policy issue.

Respectfully submitted,

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July 31, 2006

**CERTIFICATE OF SERVICE**

I hereby certify that, pursuant to the Commission's Rules of Practice and Procedure, I have this day served a true copy of COMMENTS OF SOUTHERN CALIFORNIA EDISON COMPANY (U 338-E) ON EMBEDDED WATER SAVINGS ISSUES on all parties identified on the attached service list(s). Service was effected by one or more means indicated below:

Transmitting the copies via e-mail to all parties who have provided an e-mail address. First class mail will be used if electronic service cannot be effectuated.

Executed this **31st day of July, 2006**, at Rosemead, California.

/s/
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